

## Chapter 9

### Supplementary Material

#### The global distribution of *Acacia*

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**Database 9.S1.** The database used for the analyses in this chapter (downloadable from the Zenodo repository: <https://doi.org/10.5281/zenodo.7679106>), including the table of the 105 data sources and their trust levels (Data\_sources.xlsx), the table of *Acacia* introduction events (intro\_table\_revis.csv), the table of naturalization events (nat\_table\_revis.csv), the table of all occurrences including those in Australia (occ\_table.csv, indicating geolocation and time of observation when available) and the table of countries with associated sampling effort and country codes (sampling\_eff\_country.csv).

**Box 9.S1.** Notes on the taxonomy used in assessing the global distribution of *Acacia* species.

This chapter follows the taxonomy for *Acacia* as set out in the WorldWideWattle web site (<http://worldwidewattle.com/>; accessed 20 November 2022) and elucidated in Chapter 2 (this volume). However, for data interoperability reasons we used the GBIF backbone taxonomy in the background, to translate the names used in each non-GBIF dataset into a single nomenclature. Indeed, species names from non-GBIF datasets were first matched automatically with the GBIF backbone taxonomy, using the `rgbif` R package.

The GBIF backbone taxonomy mostly matches with the WorldwideWattle taxonomy, but it establishes certain synonyms that are distinct species (accepted names) for the Worldwide Wattle taxonomy:

- *Acacia vincentii* is a synonym of *Acacia deltoidea* (found in Australia only);
- *Acacia centrinervia* is a synonym of *Acacia lineata* (found in Australia only);
- *Acacia scabra* is a synonym of *Acacia nodiflora* (found in Australia only);
- *Acacia pruinosa* is a synonym of *Pararchidendron pruinatum* (found in Australia, Indonesia, Papua New Guinea, Timor-Leste, South Africa and USA).

For the cases listed above, we couldn't differentiate the two species in the GBIF datasets, which doesn't affect our results much given that only the last case covers other countries than Australia.

Also, note that both taxonomies agree on the following synonyms:

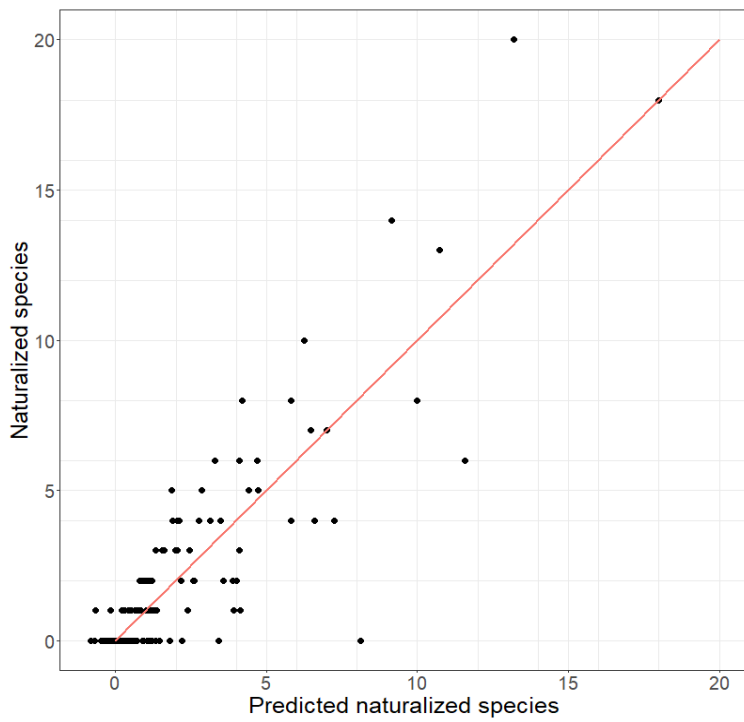
- *Acacia perangusta* is a synonym of *Acacia fimbriata*.
- *Acacia solandri* is a synonym of *Acacia spirorbis*.

**Table 9.S1.** Criteria defining the levels of confidence in identification for each source dataset as given in the dataset in **Database 9.S1** (1 corresponds to low trust and 4 to maximum trust)

Identification trust level	Criterion
<b>1</b>	Initial identification from contributors with unknown expertise. Further verification or filter may be applied, but not systematically nor explicitly.
<b>2</b>	Identification based on picture using automatic image classification filtered for identification uncertainty.
<b>3</b>	Each identification is verified by a community of naturalists based on an accessible picture.
<b>4</b>	Each identification is verified by one professional expert, or more.
<b>H</b>	Various levels of verification may apply and are explicit for each occurrence in the dataset.

**Table 9.S2.** Estimated coefficients and P values of the 8 explanatory variables effects included in our linear model of naturalization richness.

<b>Explanatory variable</b>	<b>Est. (linear) coefficient</b>	<b>P value</b>
# Introduced species used for forestry	0.55017	<b>5.68e-05 ***</b>
Squared latitude	-0.00060	<b>3.02e-3 **</b>
# Introduced species used for soil stabilization	0.38048	0.12
# Introduced species used for ornament	0.23519	0.13
# Introduced species used for agroforestry	-0.29511	0.23
Total # introduced species	0.00923	0.70
Proportion of seed lots imported	-2.09364	0.88
Sampling effort	-0.00090	0.90



**Fig. 9.S1.** True *versus* predicted number of naturalized species for 123 countries from our linear model fit (Adjusted  $R^2=0.8041$ ) based on latitude, number of introduced species, their uses, imported seeds and sampling effort.